



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/523,633

02/04/2005

Kouichirou Taniguchi

122701

6075

25944 7590 04/21/2008

OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

JACKSON, MONIQUE R

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,633	Applicant(s) TANIGUCHI, KOUICHIROU	
	Examiner Monique R. Jackson	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed 1/4/08 has been entered. New claim 12 has been added. Claims 1-12 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1-11, and new Claim 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al (USPN 7,033,675) for the reasons recited in the prior office action and restated below. With respect to new Claim 12, Taniguchi et al teach that the metal foil(s) can be laminated to the heat resistant film via heat bonding and though Taniguchi et al teach examples utilizing a temperature within the claimed range, the Examiner notes that the added process limitation of Claim 12 does not materially or structurally affect the final claimed product in a manner to further differentiate it from the final product of Taniguchi et al.

3. As discussed previously, Taniguchi et al teaches a heat resistant film and metal laminate thereof suitable for electronic parts, comprising a film formed from a mixture of a polyetherimide (PEI) resin and a polyaryleketone resin, preferably PEEK, in a ratio of 30/70 to 70/30; and 5-50 parts of filler based on 100 parts of the PEI/PEEK mixture; wherein Taniguchi et al specifically teach that example PEI resins are the claimed A-1 formula, the claimed A-2 formula, or mixtures of two or more of the PEI resins; and the metal laminate can comprise the heat resistant film heat bonded with two copper foils as claimed (Abstract; Col. 3, line 32-Col. 5, line 13; Col. 5, line 33-57; Col. 7, line 36-42; Col. 8, line 1-Col. 9, line 3; Example.) Though Taniguchi et al teach that the PEI resin may be the claimed A-1, A-2, or mixtures thereof, Taniguchi et al do not specifically teach that the PEI resin is a mixture of 30/70 to 70/30 of the

Art Unit: 1794

A-1/A-2 as claimed. However, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum amounts of the two PEI resins to utilize in the mixture taught by Taniguchi et al, wherein a 50/50 mixture of the two PEI resins would have been obvious and would fall within the claimed range.

4. Claims 1-11, and new Claim 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-144436 (JP'436) for the reasons recited in the prior office action restated below, wherein the Examiner takes the position that the heat bonding temperature limitation of new Claim 12 is a process limitation that does not materially or structurally affect the final claimed product to differentiate it from the product taught by JP'436.

5. As discussed previously, JP'436 teaches a heat resistant film and metal laminate thereof suitable for electronic parts, comprising a film formed from a mixture of 50-80 parts polyetherimide (PEI) resin and 20-50 parts polyaryleketone resin, preferably PEEK, and 10-70 wt parts of filler based on 100 parts of the PEI/PEEK mixture; wherein JP'436 specifically teaches that example PEI resins are the claimed A-1 formula, the claimed A-2 formula, or mixtures of two or more of the PEI resins; and the metal laminate can comprise the heat resistant film heat bonded with two copper foils as claimed (Abstract; Paragraphs 0006-0007, 0011, 0018.) Though JP'436 teaches that the PEI resin may be the claimed A-1, A-2, or mixtures thereof, JP'436 does not specifically teach that the PEI resin is a mixture of 30/70 to 70/30 of the A-1/A-2 as claimed. However, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum amounts of the two PEI resins to utilize, wherein a 50/50 mixture would have been obvious and would fall within the claimed range.

Response to Arguments

6. Applicant's arguments filed 1/4/08 have been fully considered but they are not persuasive. With respect to Taniguchi et al, the Applicant argues that one skilled in the art would not have been motivated to utilize a 30/70 to 70/30 mixture of the two PEI resins based on the teachings of Taniguchi et al considering Taniguchi et al teach to select the para-substituted PEI resin (formula 2/PEI-1) over the meta-substituted PEI resin (formula 3/PEI-2) and provide examples showing significantly higher edge tearing resistance when using PEI-1 over PEI-2. The Applicant argues that Taniguchi et al thus guides one of ordinary skill in the art to select PEI-1 over PEI-2 rather than a 70/30 to 30/70 mixture of the two. However, the Examiner notes that though Taniguchi et al teach that PEI-1 is "preferably used" because a mixture of PEEK with PEI-1 is different in electronic interaction between molecules from that in a mixture of PEEK with PEI-2, and "also has different miscibility and, therefore, develops a unique high-order structure, which contributes to the improvement in edge tearing resistance", Taniguchi et al clearly teach that either PEI resin can be utilized. Taniguchi et al specifically state that "any noncrystalline polyetherimide resin may be used, as far as a mixture with the crystalline polyaryleketone resin...satisfies the crystallization property described later in the specification" (Col. 4, lines 23-27) and that the "noncrystalline polyetherimide resin can be used alone or in a combination of two or more of them" (Col. 5, lines 3-5.) Hence, Taniguchi et al provide a clear suggestion to one having ordinary skill in the art at the time of the invention to utilize a mixture of two of the PEI resins, and though PEI-1 is preferred and 100% PEI-2 is not, Taniguchi et al provide a clear suggestion to utilize mixtures of the two PEI resins including PEI-2 as long as the mixture meets the disclosed crystallization property discussed in Col. 6. Therefore, the

Art Unit: 1794

Examiner maintains her position that a 50/50 mixture of PEI-1/PEI-2 would have been obvious from the teachings taught by Taniguchi et al and that one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum mixing ratio of two PEI resins, especially the two PEI resins disclosed by Taniguchi et al, that would meet the desired crystallization property and resulting compatibility and tear resistance for a particular end use.

7. With respect to JP'436, the Applicant argues that one having ordinary skill in the art at the time of the invention would not have been motivated to utilize a 30/70 to 70/30 mixture of the two PEI resins based on the teachings of JP'436 because JP'436 teaches one skilled in the art to optimize a mixing ratio of the two PEI resins to obtain a strong bond to metal, wherein the Applicant refers to data in their specification showing that a mixture of 10/40/50 (PEI-1/PEI-2/PEEK) and a mixture of 0/50/50, both outside the claimed invention ratio range, provide slightly greater bonding strength (1.6 N/mm) over a mixture of 30/20/50 (1.5 N/mm) within the claimed range. However, the Examiner does not find this argument persuasive and notes that 1.5 and 1.6 are within experimental error of each other and hence essentially the same. The Applicant further argues that JP'436 does not teach edge tearing strength or that heat bonding is conducted at 260°C or lower. However, it is first noted that the heat bonding temperature claimed in new Claim 12 is a product-by-process limitation and that product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the

Art Unit: 1794

same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.” In re Thorpe, 227 USPQ 964,966 (Fed. Cir. 1985.) Considering the process limitation of Claim 12 does not provide any additional structural or material limitations to differentiate the final claimed product over a product produced at a different heat bonding temperature, the Examiner notes that the limitation adds no additional patentable weight to the claimed product. As for the edge tearing strength, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Considering the Applicant has not provided a clear showing that the resulting edge tearing properties are “unexpected”, the Examiner maintains her position that the claimed invention would have been obvious over JP'436 and that one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum amounts of the two PEI resins taught by JP'436 to utilize, wherein a 50/50 mixture would have been obvious and would fall within the claimed range.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1794

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/
Primary Examiner, Art Unit 1794
April 17, 2008